

113.1 - Cements and Related materials (powder form)

These portland (1880b, 1881a, 1884b, 1885a, 1886a, 1887a, 1888b, and 1889a) and calcium aluminate (1882a and 1883a) cement SRMs are for x-ray spectroscopic and chemical analysis of cements and related materials. [Also see [Table 301.2](#) Cement Turbidimetry and Fineness and [Table 113.2](#) Portland Cement Clinkers.] SRM 2696 Silica Fume is a cement additive. Each unit of SRM 2696 consists of one bottle.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	634a	1880b	1881a	1882a	1883a	1884b	1885a	1886a	1887a	1888b	1889a	2696
Description												
	Portland Cement	Portland Cement	Portland Cement	Calcium Aluminate Cement	Calcium Aluminate Cement	Portland Cement	Portland Cement	Portland Cement with Low Iron)	Portland Cement	Portland Cement	Portland Cement (Blended with Limestone)	Silica Fume
Unit Size	(100 g)	(4 vials x 5 g)	(4x5 g)	(4x5 g)	(4x5 g)	(5 vials x 4.5 g)	(4 x 5 g)	(4 x 5 g)	(4 x 5 g)	(4 vials x 5 g)	(4 x 5 g)	(70 g)
Component (mass fraction, in %)												
Al ₂ O ₃	5.015	5.183	7.060	39.14	70.04	4.851	4.026	3.875	6.202	4.277	3.89	0.2080
Cr ₂ O ₃	0.0114	0.01927	0.0588	0.113	0.006	0.00791	0.0195	0.0024	0.009	0.01253	0.0072	
Fe ₂ O ₃	3.362	3.681	3.09	14.67	0.078	2.937	1.929	0.152	2.861	3.062	1.937	0.055
K ₂ O	0.3572	0.646	1.228	0.051	0.014	0.957	0.206	0.093	1.100	0.658	0.605	0.655
Loss on Ignition at 950 °C	1.66	1.666	(1.59)	(0.20)	(0.35)	(1.448)	(1.68)	(1.56)	(1.43)	(2.039)	(3.28)	2.11*
Mn ₂ O ₃	0.0229	0.1981	0.1042	0.060	(0.003)	0.0750	0.0478	0.0073	0.1186	0.0652	0.2588	0.0299
Na ₂ O	0.0842	0.0914	0.199	0.021	0.30	0.278	1.068	0.021	0.4778	0.1364	0.195	0.129
P ₂ O ₅	0.1767	0.2443	0.1459	0.070	(0.003)	0.0965	0.1220	0.022	0.306	0.07307	0.110	0.0863
SiO ₂	20.493	20.42	22.26	4.01	0.24	19.30	20.909	22.38	18.637	20.42	20.66	95.61
TiO ₂	0.2463	0.236	0.3663	1.786	0.020	0.2651	0.195	0.084	0.2658	0.2316	0.227	
Calcium oxide (CaO)	65.07	64.16	57.58	39.29	29.52	61.31	62.39	67.87	60.90	63.13	65.34	0.486
Chlorine (Cl)		0.01830	0.013			0.0065	0.0040	0.0042	0.0104	0.0143	0.0019	
Fluorine (F)		0.0539	(0.09)			0.0394	0.13)	(0.02)	(0.09)	0.048	(0.05)	
Free CaO		1.567	(0.29)			0.418	(2.05)	(2.16)	(0.53)	1.42	(0.58)	
Insoluble Residue		0.487	(5.2)			0.159	(0.22)	(0.23)	(0.13)	0.32	(0.66)	
Component (mass fraction, in %)												
LOI 220 °C to 550 °C						0.261				0.616		
LOI 45 °C to 220 °C						0.590				0.573		

* Loss on Ignition at 750°C

Certified values are normal font.
Reference values are italicized.
Values in parentheses are for information only.

113.1 - Cements and Related materials (powder form)

These portland (1880b, 1881a, 1884b, 1885a, 1886a, 1887a, 1888b, and 1889a) and calcium aluminate (1882a and 1883a) cement SRMs are for x-ray spectroscopic and chemical analysis of cements and related materials. [Also see [Table 301.2](#) Cement Turbidimetry and Fineness and [Table 113.2](#) Portland Cement Clinkers.] SRM 2696 Silica Fume is a cement additive. Each unit of SRM 2696 consists of one bottle.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

LOI 550 °C to 950 °C											
Magnesium oxide (MgO)	1.0057	1.176	2.981	0.51	0.19	4.74	4.033	1.932	2.835	3.562	0.814
Srontium oxide (SrO)	0.0735	<i>0.0272</i>	0.036	<i>0.024</i>	<i>0.019</i>	0.0258	0.638	<i>0.018</i>	0.322	0.1009	0.042
Sulfide Sulfur		<i>0.0131</i>	(0.035)			<i>0.0072</i>				<i>0.015</i>	
Sulfur trioxide (SO₃)	2.780	2.710	3.366			4.034	2.830	2.086	4.622	2.634	2.69
Total		(100.49)	(100.18)	(99.95)	(100.78)	(100.54)	(100.18)	(100.12)	(100.21)	(100.42)	(100.09)*
Zinc oxide (ZnO)	0.0222	<i>0.01054</i>	0.0489	<i>0.004</i>		0.0042	0.0029	(0.001)	0.0667	0.01253	0.0048
											0.051

* Loss on Ignition at 750°C

Certified values are normal font.

Reference values are italicized.

Values in parentheses are for information only.